

1.3 - Solving Linear Equations

Equation: statement in which two expressions are equal

Linear Equation: equation that can be written in the form $ax = b$ where a and b are constants and $a \neq 0$

Solution: a number that makes the statement true when substituted in for a variable

Steps for Solving Linear Equations

1. Draw the line
2. Move the variables to one side of the equation
3. Move the numbers to the side without the variables
4. Get the variable alone

Ex 1: $5x + 11 = 21$

$$\begin{array}{r|l} -11 & -11 \\ \hline 5x & 10 \\ \hline 5 & 5 \end{array}$$

$x = 2$

Ex 2: $7y - 8 \neq 9y + 4$

$-7y$

$-7y$

$-8 \neq 2y + 4$

-4

-4

$\frac{-12}{2} = \frac{2y}{2}$

$y = -6$

Ex 3: $\frac{3}{2} \times \frac{2}{3} m = \frac{6}{1} \times \frac{3}{2} = \frac{18}{2} = 9$

$m = 9$

Ex 4: $3 - \frac{1}{2}n = \frac{1}{3}n - 4$

$$+\frac{1}{2}n \quad +\frac{1}{2}n$$

$$3 = \frac{5}{6}n - 4$$

$$+4$$

$$+4$$

$$\left(\frac{6}{5}\right)7 = \frac{5}{6}n \left(\frac{6}{5}\right)$$

$$\boxed{4\frac{2}{5} = n}$$

$$= \frac{1}{3}n + \frac{1}{2}n$$

$$= \frac{2}{6}n + \frac{3}{6}n$$

$$= \frac{5}{6}n$$

Homework: 1.3 Worksheet